

» LP+ CO2 (LCD) (Temp_rH)

Room pendulum sensor for air quality

thermokon[®]
HOME OF SENSOR TECHNOLOGY

Datasheet

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Image similar

» APPLICATION

Room pendulum sensor for measuring the CO₂ content in large rooms (open-plan offices, production halls, etc.). For direct connection to a DDC or a monitoring system, an analog 0..10 V output is available.

» TYPES AVAILABLE

Room pendulum sensor, optional with LCD CO₂ + Temp – active 2x 0..10 V | 2x 4..20 mA | Relay

LP+ CO₂ (LCD) Temp VV
LP+ CO₂ (LCD) Temp AA
LP+ CO₂ (LCD) Temp VV Relay

Room pendulum sensor, optional with LCD CO₂ + Temp + rH (opt.) – active 3x 0..10 V

LP+ CO₂ (LCD) Temp_rH 3xV

» SECURITY ADVICE – CAUTION



The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

» NOTES ON DISPOSAL



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

» BUILD-UP OF SELF-HEATING BY ELECTRICAL DISSIPATIVE POWER

If a re-calibration should become necessary later directly on the sensor, this can be done by means of the USEapp software and an optional Bluetooth interface.

Remark: Occurring draft leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.

» INFORMATION ABOUT INDOOR AIR QUALITY CO₂

EN 13779 defines several classes for indoor air quality:

Category	CO ₂ content above the content in outdoor air in ppm		Description
	Typical range	Standard value	
IDA1	<400 ppm	350 ppm	Good indoor air quality
IDA2	400.. 600 ppm	500 ppm	Standard indoor air quality
IDA3	600..1.000 ppm	800 ppm	Moderate indoor air quality
IDA4	>1.000 ppm	1.200 ppm	Poor indoor air quality

» INFORMATION ABOUT SELF-CALIBRATION FEATURE CO₂

Virtually all gas sensors are subject to some sort of drift. The degree of drift is partially dependent on the use of quality components and good design. But even with good components and excellent design, a small amount of drift can still occur in the sensor that may ultimately result in the need for a sensor to be recalibrated.

The natural drift of the sensor is caused by:

- Dust/dirt • Aggressive chemicals absorbed inside chamber / optical elements • Corrosion inside chamber (high rh, condensation) • Temperature cycles causing mechanical stress • Electron/hole migration in the photo detector's semiconductor • Drift of photo amplifiers • External mechanical stress on chamber • Light source wear-off

Most of the effects listed above will be compensated by the automatic self-calibration of the sensor's dual channel technology. In contrast to commonly used ABC-Logic self-calibrating sensors with dual channel technology are suitable for all applications including those operating 24 hours, 7 days a week, for example hospitals.

However some effects cannot be compensated automatically and may result in a very gradual natural drift of a few ppm per month. This natural drift is not covered by Thermokon's 5-year warranty.

» APPLICATION NOTICE FOR HUMIDITY SENSORS

Refrain from touching the sensitive humidity sensor/element. Touching the sensitive surface will void warranty.

For standard environmental conditions re-calibration is recommended once a year to maintain the specified accuracy.

When exposed to high ambient temperature and/or high levels of humidity or presence of aggressive gases (i.e. chlorine, ozone, ammonia) the sensor element may be affected and re-calibration may be required sooner than specified. Re-calibration and deterioration of the humidity sensor due to environmental conditions are not subject of the general warranty.

» TECHNICAL DATA

Measuring values	CO ₂ , temperature + humidity (depending on the device)	
Output voltage	2..3x 0..10 V or 0..5 V, min. load 10 kΩ (live-zero configuration via Thermokon USEapp)	
Output Amp (type-dependent)	AA 2x 4..20 mA, max. load 500 Ω	
Power supply (type-dependent)	VV 3xV Relay 15..35 V = or 19..29 V ~ SELV	AA 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)	
Messbereich Temperatur (typabhängig)	VV 3xV 0..+50 °C (Standardeinstellung), parametrierbar über Thermokon USEapp	
Messbereich Feuchte (typabhängig)	3xV 0..100% rH ohne Betauung, optional parametrierbar über Thermokon USEapp (Enthalpie, absolute Feuchte, Taupunkt)	
Messbereich CO ₂	0..2000 ppm (Standard), 0..5000 ppm (optional parametrierbar über Thermokon USEapp)	
Genauigkeit Temperatur	±0,5 K (typ. bei 21 °C)	
Genauigkeit Feuchte (typabhängig)	3xV ±2% zwischen 10..90% rH (typ. bei 21 °C)	
Genauigkeit CO ₂	±50 ppm +3% vom Messwert (typ. bei 21 °C, 50% rH)	
Calibration	self-calibration, Dual Channel	
Sensor	NDIR (non-dispersiv, infrared), sensor wire 5 m, for other lengths please request	
Display (optional)	LCD 29x35 mm with RGB backlight	
Enclosure (type-dependent)	enclosure USE-L, PC, pure white, with removable cable entry	with LCD (optional) cover PC, transparent
Protection	IP65 according to EN 60529	
Cable entry (type-dependent)	VV AA 3xV Flextherm M20, for wire Ø=4,5..9 mm, removable	Relay M25 with fourfold cable entry for wire with max. Ø=7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²	
Ambient condition	0..+50 °C, max. 85% rH short term condensation	
Mounting	installation is also possible using mounting base	

» PRODUCT TESTING AND CERTIFICATION



Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>.

» CONFIGURATION



The Thermokon bluetooth dongle with micro-USB is required for communication between USEapp and USE-M / USE L (Item No.: 668262). Commercial bluetooth dongles are not compatible.

Application-specific reconfiguration of the devices can be carried out using the Thermokon USEapp. The configuration is carried out in the voltage-supplied state.



The configuration-app and the app description can be found in the Google Play Store or in the Apple App Store.



» CONNECTION PLAN

LP+ CO2 (LCD) Temp VV

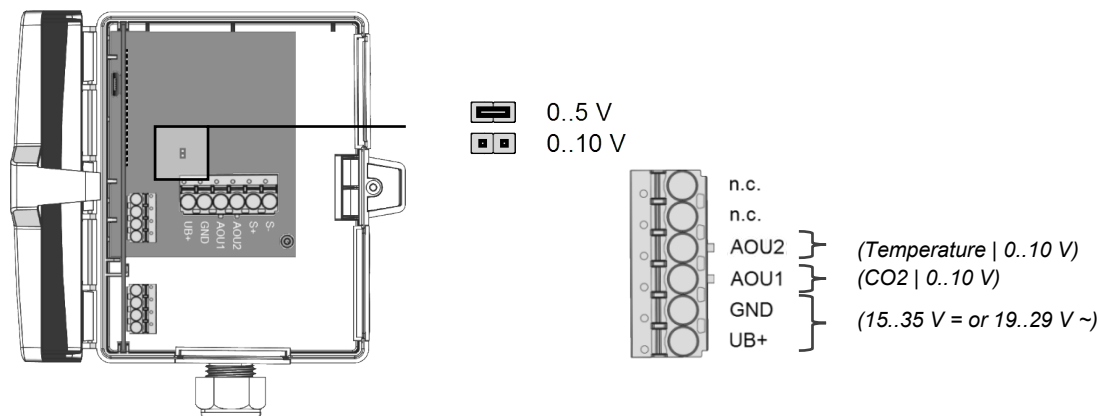
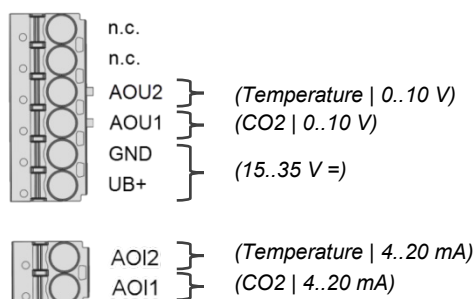
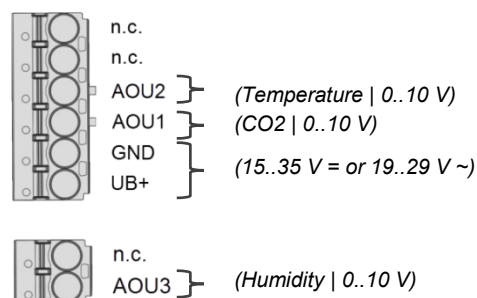


Illustration shows type 3xV

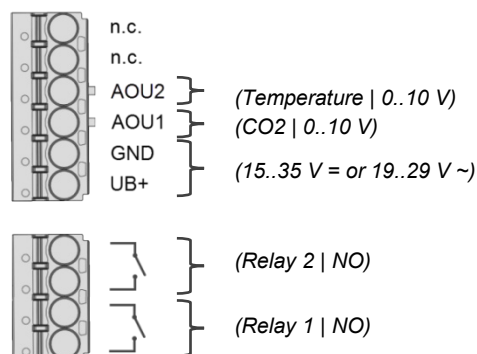
LP+ CO2 (LCD) Temp AA



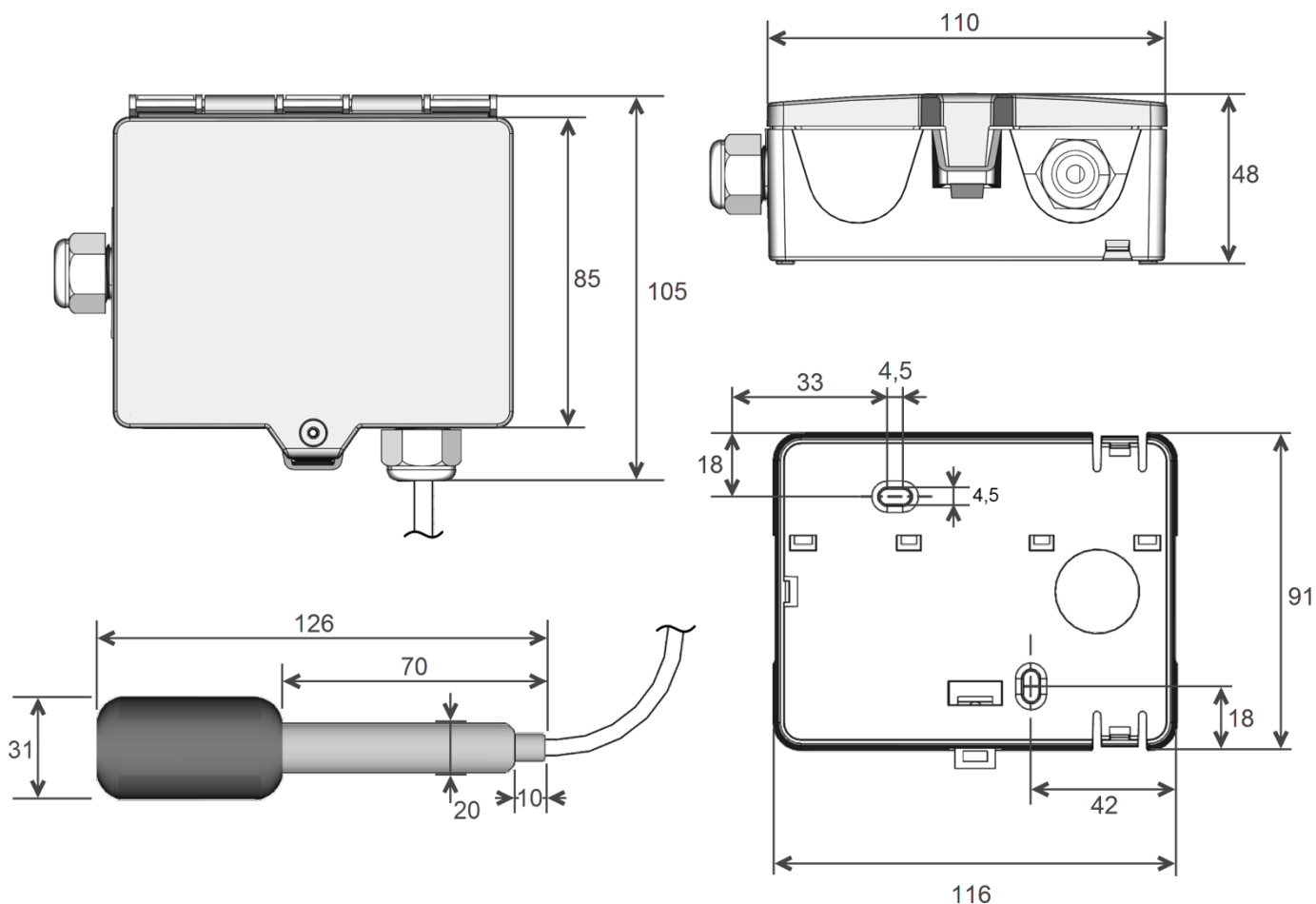
LP+ CO2 (LCD) Temp_rH 3xV



LP+ CO2 (LCD) Temp VV Relay



» DIMENSIONS (MM)



» ACCESSORIES (INCLUDED IN DELIVERY)

Mounting base

Mounting kit universal

• Cover screw + screw cover • 2 Rawlplugs • 2 Screws (countersunk head) • 2 Screws (rounded head)

Item No. 631228

Item No. 698511